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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,597	08/15/2001	Marc Schaub	RSTN-005	1776
30139	7590	11/29/2005	EXAMINER	
WILSON & HAM 2530 BERRYESSA ROAD PMB: 348 SAN JOSE, CA 95132			FERRIS, DERRICK W	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/930,597

Applicant(s)

SCHAUB, MARC

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5-6, 8-12, 15-17, 19-24, 26, 30-33, 35, 39, 40 and 41 is/are rejected.
- 7) ☒ Claim(s) 2-4, 7, 13, 14, 18, 25, 27-29, 34 and 36-38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. This Office action is in response to applicant's paper filed 10/3/2005.
2. The examiner thanks applicant for pointing out that **claims 14 and 18** should be objected to and not rejected based on corresponding claims 3 and 18. Hence the rejection for these claims has been withdrawn.
3. Examiner does **not withdraw** the anticipated rejection to *Kalkunte*. The following comments fully address applicant's arguments with respect to the rejection. Applicant argues the following two issues: a shared memory buffer that serves a plurality of output links and linking said packets into linked lists in the order that said packets are written into memory. With respect to a shared memory buffer that serves a plurality of output links, *Kalkunte* teaches shared memory as a copy of the memory segment, see e.g., column 5, lines 60-65. Since each egress port has a copy of a memory segment (see e.g., figure 10), shared memory buffer serves a plurality of output links using a reasonable but broad interpretation of the claimed subject matter in view of applicant's specification. The examiner will agree applicant's further structure of a shared buffer disclosed in the specification with respect to a shared memory may not be taught by *Kalkunte*, such as an *output* link ID for each packet structure (see e.g., applicant's figure 5 in view of applicant's specification at page 8, first full paragraph); however, the above additional subject matter is not further recited in the claim(s). With respect to linking said packets into linked lists in the order that said packets are written into memory, applicant is correct in noting that the cells (and not packets) for linked lists in the Link List Array (LLA). However, the packets are "linked" together using the transaction queues (TQ) where a pointer for each packet

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is found in the transaction queue, see e.g., column 11, lines 1-10. The order is further preserved based on the FIFO nature of the queue, see e.g., column 18, lines 46-64. Thus the claim limitation is met given a reasonable but broad interpretation of the claimed subject matter in view of applicant's specification. However, applicant's arguments are further persuasive with respect to how a link list is formed and in particular the further limitations recited e.g., in **claims 2, 13, 25 and 34** with respect to a NEXT pointer. As such, the rejection for these claims has been **withdrawn**.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. **Claims 1, 5-6, 8-9, 11-12, 15-17, 19-20, 22-24, 26, 30, 32-33, 35, 39 and 40** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,567,417 B2 to *Kalkunte et al.* ("*Kalkunte*").

As to **claim 1**, see e.g., figure 10 of *Kalkunte* which teaches writing packets into a shared memory as e.g., writing packets in Packet Pool (i.e., FIFO memory) from a corresponding ingress port. The packets are saved in a link list format, see e.g., column 11, lines 54-67 and column 16, lines 30-38. An order is also preserved since information for each packet is stored in transaction queues which make up a link list array, see e.g., column 18, lines 47-63. As the link list stores time stamp information, an oldest packet is identified for an output link that is available for packet transmission, see e.g., column 11. With respect to the further limitation, dispatching, to the respective available output link, even if said identified oldest packet is preceded by an older packet that is intended for an unavailable output link, see e.g., head-of-link blocking at column 12, lines 46-67. In particular, the oldest packet is dropped when the time expires using the time stamp such that the next available packet is serviced meeting the above limitation. For the purpose the rejection, examiner notes that all the packets serviced can have the same priority.

As to **claim 5**, the HEAD pointer is the NEXT pointer that is at the end of the FIFO Transaction Queue.

As to **claim 6**, the Transaction Queue (XQ) is serviced in order based on read cycle, where the HEAD pointer points to the next packet in memory.

As to **claims 8-9**, the availability of an output port is based on the HOL blocking which is done when servicing a packet.

As to **claim 11**, packets can be variable length, see e.g., column 10, lines 52-54.

As to **claim 12**, see similar rejection to claim 1.

As to **claim 15**, see similar rejection to claim 4.

As to **claim 16**, see similar rejection to claim 5.

As to **claim 17**, see similar rejection to claim 6.

As to **claim 19**, see similar rejection to claim 8.

As to **claim 20**, see similar rejection to claim 9.

As to **claim 22**, see similar rejection to claim 11.

As to **claim 23**, see similar rejection to claim 1. In addition, the packet serviced first is placed in a FIFO queue thus ensuring that the oldest packet is serviced first. The availability is further determined based on HOL blocking.

As to **claim 24**, the oldest packet that is intended for an available link is dispatched in the time expires for the oldest packet in the Transaction Queue (XQ) based on the time stamp for the packet.

As to **claim 26**, see similar rejection to claim 5.

As to **claim 30**, see similar rejection to claim 9.

As to **claim 32**, see similar rejection to claim 23.

As to **claim 33**, see similar rejection to claim 24.

As to **claim 35**, see similar rejection to claim 26.

As to **claim 39**, see similar rejection to claim 30.

As to **claim 40**, see similar rejection to claim 30.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 10, 21, 31, and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,567,417 B2 to *Kalkunte et al.* ("*Kalkunte*") in view of U.S. Patent Application No. 2002/0124149 A1 to *Ni et al.* ("*Ni*").

As such to **claim 10**, *Kalkunte* discloses the limitations in the base claim.

*Kalkunte* is silent or deficient to the further limitation further including dispatching *multiple* packets in the *same* dispatch cycle if there are multiple packets that are intended for available output ports.

*Ni* teaches the further recited limitation above at e.g., in figure 3a step 540.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Kalkunte* by clarifying that it is known in the art to service multiple packets in a same dispatch cycle.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be for optimization and in particular to process packets that are greater than a preset size. In particular, *Ni* cures the above-cited deficiency by providing a motivation found at e.g., step 550 in figure 3a. Second, there would be a reasonable expectation of success since both references teach processing packets using linked-lists. Thus the references either in singular or in combination teach the above claim limitation(s).

As to **claims 21, 31, and 41**, see similar rejection to claim 10.

*Allowable Subject Matter*

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8. **Claims 2, 3, 4, 7, 13, 14, 18, 25, 27, 28, 29, 34, 36, 37 and 38** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DWF

Derrick W. Ferris  
Examiner  
Art Unit 2663

  
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